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CESARI AND MCKENNA, LLP
88 BLACK FALCON AVENUE
BOSTON, MA 02210

EXAMINER
BAYARD, DJENANE M

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/027,457	COATNEY ET AL.
	Examiner	Art Unit
	Djenane M. Bayard	2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>18 November 2005</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>6-9,11-17,19,20 and 23-50</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>6-9,11-17,19,20,23-50</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This is in response to amendment filed on 11/18/05 in which claims 6-9, 11-17, 19-20,

23-50 are pending.

Response to Arguments

2.   Applicant's arguments have been fully considered but they are not persuasive. As per

claims 6 and 9, Applicant argues that Brunelle fails to teach writing ownership information to a

predetermined area of the disk. However, Brunelle clearly teaches wherein "the read key

commands requests that the shared device manager return a list of the cluster nodes that have

previously registered with storage device by returning a list of registration keys stored in the -

storage device (See col. 5, lines 27-37) and wherein "the persistent reserved table is stored in the

storage device. The persistent reserve table includes a reservation entry for each reservation"

(See col. 7, lines 8-16).

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

4. Claims 6–8 and 27-50 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S.

Patent Application No. 6,654902 to Brunelle et al.

a. As per claims 6 and 27, Brunelle et al teaches a method of claiming ownership of a disk

by a network device in a network storage system comprising the steps of: writing ownership

information to a predetermined area of the disk; a small computer system interface level 3

persistent reservation tag to a state of network device ownership (See col. 6, lines 37-54).

b. As per claims 7, Brunelle et al teaches the claimed invention as described above.

Furthermore, Brunelle et al teaches wherein the ownership information further comprises a serial

number of the network device (See col. 5, lines 4-11 and col. 6, liens 38-54).

c. As per claim 8, Brunelle et al teaches wherein the network device comprises a file server

(See col. 3)

d. As per claims 28, 34-36, Brunelle et al teaches network storage system one or more

storage devices, each storage device having a predetermined area for storing ownership

information and each storage device having a small computer system interface (SCSI) level 3

persistent reservation tag (See col. 5, lines 25-67); at least one network device having an

ownership table constructed based upon the ownership information from each storage device

(See col. 7, lines 7-17, *a persistent reserve table stored in the storage device. The persistent*

reserve table includes a reservation entry for each reservation. The reservation entry includes

an initiator identifier and a reservation descriptor); the at least one network device having an

ownership layer for comparing the SCSI level 3 persistent reservation tag to the ownership

information of the same storage device (See col. 7, lines 30-45, *The storage device searches the*

persistent reservation table and if the storage device finds a reservation entry in the persistent

reservation table for the imitator identifier from which the write command was received the write

command is processed)and, if there is not a match, changing the SCSI level 3 persistent

reservation tag to match the ownership information (See col. 8, lines 2-35, *the device Io request*

dispatcher assigns a key, for the cluster from the connection manager. The register routine in

the device IO request dispatcher issues a request to register the cluster node with each desired

shared storage device connected to the storage network) the at least one network device having a

disk storage layer for configuring the one or more storage devices identified in the ownership

table into at least one volume for use by the network device (See col. 8, lines 46-55, *the*

registered cluster nodes are permitted to write data to the shared storage device because the

type of reservation enabled is write exclusive registrants only).

e.   As per claims 44 and 49-50, Brunelle et al teaches a method for a network device to

manage ownership of one or more storage devices in a network storage system, comprising the

steps of: reading ownership information from a predetermined area of each storage device;

accessing a small computer system interface (SCSI) persistent reservation tag associate with each

storage device; comparing the SCSI persistent reservation tag to the ownership information of

the same storage device (See col. 7, lines 30-45, *The storage device searches the persistent*

reservation table and if the storage device finds a reservation entry in the persistent reservation

table for the initiator identifier from which the write command was received the write command

is processed)and, if there is not a match, changing the SCSI persistent reservation tag to match

the ownership information; and configuring the one or more storage devices for use by the

network device (See col. 8, lines 2-35, *the device Io request dispatcher assigns a key, for the*

cluster from the connection manager. The register routine in the device IO request dispatcher

issues a request to register the cluster node with each desired shared storage device connected

to the storage network).

f.   As per claims 29, 37, 42 and 47, Brunelle et al teaches the claimed invention as described

above. Furthermore, Brunelle et al teaches setting ownership information at the predetermined

area of each storage device (See col. 7, lines 1-17).

g.   As per claims 30 and 38, Brunelle et al teaches wherein the step of configuring further

comprises: organizing the one or more storage devices into at least one Redundant Array of

independent Disks (RAID) group (See col. 3, lines 30-35)

h.   As per claims 31, 39 and 48, Brunelle et al teaches wherein the predetermined area of the

one or more storage devices is sector zero of the one or more storage devices (See col. 5 lines 55-

64).

i.   As per claims 32 and 40, Brunelle et al teaches wherein the ownership information is a

serial number of the network device that owns that particular storage device (See col. 7, lines 1-

17).

j.   As per claims 33 and 41, Brunelle et al teaches wherein the ownership table includes a

world wide name for each of the storage devices, the world wide name being used to identify

each of the storage devices (See col. 7, lines 1-17).

k.   As per claims 43 and 45, Brunelle et al teaches the claimed invention as described above.

Furthermore, Brunelle et al teaches wherein the small computer system interface (SCSI)

persistent reservation tag is a small computer system interface level 3 (SCSI-3) persistent

reservation tag (See col. 5, lines 25-67).

l.   As per claim 46, Brunelle et al teaches the claimed invention as described above.

Furthermore, Brunelle et al teaches in response to reading the ownership information, creating an

ownership table on the network device that identifies the one or more storage devices owned by

the network device; and using the ownership table to configure the one or more storage devices

into at least one volume (See col. 8, lines 46-55, *the registered cluster nodes are permitted to*

write data to the shared storage device because the type of reservation enabled is write exclusive

registrants only).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 9-20 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over

U.S. Patent No. 6,654902 to Brunelle et al in view of U.S. Patent Application No. 2003/0093501

to Carlson et al.

a.   As per claim 9 and 17, Brunelle et al teaches the claimed invention as described above.

Furthermore, Brunelle et al teaches a network storage system comprising: a plurality of network

devices; and a plurality of disks having a first ownership attribute written to a predetermined area

of the disk (See co. 5, lines 27-37, *the read keys command requests that the shared device*

manager return a list of the cluster nodes that have previously registered with the storage device

by returning a list of registration keys stored in the stored in the storage device) and a second

ownership attribute in the form of a small computer system interface persistent reservation tag

(See col. 6, lines 38-54). However, Brunelle et al failed to teach wherein one or more switches,

each network device connected to at least one of the one or more switch; each disk connected to

at least one of the plurality of switches.

Carlson et al teaches a method, system and program for configuring system resources. Furthermore, Carlson et al teaches wherein one or more switches, each network device connected to at least one of the one or more switch; each disk connected to at least one of the plurality of switches (See page 2, paragraph [0039]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein one or more switches, each network device connected to at least one of the one or more switch; each disk connected to at least one of the plurality of switches as taught by Carlson et al in view of Brunelle et al in order to interconnect the attached host devices (see page 2, paragraph [0039]).

b.   As per claim 20, Brunelle teaches and a plurality of disks having a first ownership attribute written to a predetermined area of the disk (See co. 5, lines 27-37, *the read keys command requests that the shared device manager return a list of the cluster nodes that have previously registered with the storage device by returning a list of registration keys stored in the stored in the storage device*) and a second ownership attribute in the form of a small computer system interface persistent reservation tag (See col. 6, lines 38-54). However, Brunelle et al fails to teach wherein one or more switches interconnected to form a switching fabric; a plurality of disks, each of the disks connected to at least one of the switches; and one or more network devices, interconnected with the switching fabric, each of the network devices being adapted to own a predetermined set of disks of the plurality of disks.

Carlson et al teaches a network storage system comprising: one or more switches interconnected to form a switching fabric; a plurality of disks, each of the disks connected to at

least one of the switches (See page 2, paragraph [0039]); and one or more network devices,

interconnected with the switching fabric, each of the network devices being adapted to own a

predetermined set of disks of the plurality of disks (See page 8, paragraph [0082], The panel

displays a slider that the administrator may control to indicate the amount of storage space to

allocate to the host).

It would have been obvious to one with ordinary skill in the art at the time the invention

was made to incorporate the teaching of Carlson in the claimed invention of Brunelle et al in

order to interconnect the attached host devices (see page 2, paragraph [0039]).

c.   As per claims 11 and 24, Brunelle et al in view of Carlson et al teaches the claimed

invention as described above. Furthermore, Brunelle et al teaches wherein the small computer

system interface persistent reservation tag is a small computer system interface level 3 persistent

reservation tag (See col. 5, lines 25-67).

d.   As per claims 12, Brunelle et al in view of Carlson et al teaches the claimed invention as

described above. Furthermore, Brunelle et al teaches wherein the small computer system

interface level 3 persistent reservation tag is set such that only the network device may write to

the disk (See col. 5, lines 60-67 and col. 6, lines 1-6).

e.   As per claim 13, Brunelle et al in view of Carlson et al teaches the claimed invention as

described above. Furthermore, Brunelle et al teaches wherein the ownership attribute further

comprises a serial number of the network device that owns that particular disk (Col. 5, lines 4-11 and col. 6, lines 37-54).

f.   As per claim 14, Brunelle et al in view of Carlson et al teaches the claimed invention as described above. Furthermore, Brunelle et al failed to teach wherein each of the plurality of file servers can read data from each of the plurality of disks (See col. 5, lines 60-67 and col. 6, lines 1-6).

g.   As per claim 15, Brunelle et al in view of Carlson et al teaches the claimed invention as described above. Furthermore, Brunelle et al in view of Carlson et al failed to teach wherein only a network device that owns one of the plurality of disks can write data to the one disk (See col. 5, lines 60-67 and col. 6, lines 1-6).

h.   As per claims 16 and 19, Brunelle et al in view of Carlson et al teaches the claimed invention as described above. Furthermore, Brunelle et al teaches wherein the network devices comprise file servers (See col. 4)

i.   As per claim 23, Brunelle et al in view of Carlson et al teaches the claimed invention as described above. Furthermore, Brunelle et al teaches wherein the first ownership attribute further comprises a serial number of one of the one or more network devices (See col. 5, lines 4-11).

7.   Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent

No. 6,654902 to Brunelle et al in view of U.S. Patent Application No. 2003/0093501 to Carlson

et al as applied to claim 20 above and further in view of U.S. Patent Application No.

2003/0061491 to Jaskiewicz et al.

a.   As per claim 25, Brunelle et al Carlson et al teaches the claimed invention as described

above. However, Brunelle et al in view of Carlson et al failed to teach wherein each of the

network devices further comprises a disk ownership table, the disk ownership table containing

ownership data for each of the disks.

        Jaskiewicz et al teaches wherein each of the network devices further comprises a disk

ownership table, the disk ownership table containing ownership data for each of the disks (See

page 3, paragraph [0022]).

        It would have been obvious to one with ordinary skill in the art at the invention was made

to incorporate wherein each of the network devices further comprises a disk ownership table,

the disk ownership table containing ownership data for each of the disks as taught by

Jaskiewicz et al in the claimed invention of Brunelle et al in view of Carlson et al in order to

give the host device permission to write and read data to and from the storage location the right

device id (See page 3, paragraph [0022]).

b.   As per claim 26, Brunelle et al in view of Carlson et al teaches the claimed invention as

described above. However, Brunelle et al in view of Carlson et al failed to teach wherein the

ownership table further comprises a world wide name for each of the disks, the world wide name

being used for identification of each of the disks.

Jaskiewicz et al teaches wherein the ownership table further comprises a world wide

name for each of the disks, the world wide name being used for identification of each of the

disks (See page 3, paragraph [0021]).

It would have been obvious to one with ordinary skill in the art at the invention was made

to incorporate wherein the ownership table further comprises a world wide name for each of the

disks, the world wide name being used for identification of each of the disks as taught by

Jaskiewicz et al in the claimed invention of Brunelle et al in view of Carlson et al in order to

give the host device permission to write and read data to and from the storage location the right

device id (See page 3, paragraph [0022]).

Conclusion

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Djenane M. Bayard whose telephone number is (571) 272-3878.

The examiner can normally be reached on Monday- Friday 5:30 AM- 3:00 PM..

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Rupal Dharia can be reached on (571) 272-3880. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Djenane Bayard

Patent Examiner

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER